

CLAIMS

What is claimed is:

1. A fastener comprising:

a first portion having a flexible skirt and at least two support posts distally extending from a first side of the flexible skirt; and

a second portion permanently joined with the first portion and having at least two deflection wings extending from the first side of the flexible skirt and at least one substantially U-shaped member freely extending from a second side of the flexible skirt.

2. The fastener of Claim 1, wherein the first portion comprises a polymeric molding.

3. The fastener of Claim 1, wherein the second portion comprises a metal.

4. The fastener of Claim 1, wherein each deflection wing comprises:

a fixed end integrally joined to a distal end of the second portion; and

a displaceable end;

wherein the displaceable end of a first one of the deflection wings is spatially separable from the displaceable end of a second one of the deflection wings.

5. The fastener of Claim 4, wherein each deflection wing comprises:
a first bend adjacent the distal end of the second portion;
a deflection wing body angularly directable by the first bend away
from a plane formed in parallel with the distal end of the second portion; and
a second bend located at a junction between the deflection wing
body and the displaceable end, the second bend angularly directing the
displaceable end toward the support posts.

6. The fastener of Claim 5, comprising:
the first one of the deflection wings being positionable on a first side
of the plane formed in parallel with the distal end of the second portion; and
the second one of the deflection wings being positionable on a
second side of the plane formed in parallel with the distal end of the second
portion.

7. The fastener of Claim 4, comprising a plate portion adjacent the
distal end of the second portion, the plate portion operable to integrally support
the fixed end of each deflection wing.

8. The fastener of Claim 7, comprising a bridge connectably joining a
distal end of each of the support posts, the bridge being insert moldable with the
plate portion.

9. The fastener of Claim 1, wherein each support post comprises a substantially T-shaped cross section having an edge of the second portion insert moldable therein.

10. The fastener of Claim 1, wherein each of the distal ends of the support posts comprise a beveled end.

11. The fastener of Claim 1, wherein each U-shaped member comprises at least one toothed retention element.

12. A one-piece apparatus for joining accessories to vehicles, the apparatus comprising:

 a polymeric first portion including:

 a flexible skirt;

 a pair of support posts extending substantially perpendicularly from a side of the skirt; and

 a bridge connectably joining distal ends of each of the support posts; and

 a metallic second portion including an end portion partially insert moldable into the bridge, the end portion having a pair of integrally connected metallic deflectable wings, the deflectable wings extendable toward the flexible skirt.

13. The apparatus of Claim 12, wherein the second portion comprises a head having at least one engagement member.

14. The apparatus of Claim 13, wherein the second portion comprises a central portion insert moldable with the support posts, the central portion integrally joined to the head and extending from the head through the flexible skirt.

15. The apparatus of Claim 13, wherein each engagement member comprises:

a substantially U-shaped clip having an open end facing away from the flexible skirt; and

a bight formed between a junction of an opposed pair of clip bends, the bight including at least one barb.

16. The apparatus of Claim 12, wherein the polymeric first portion comprises a polyamide material.

17. The apparatus of Claim 12, wherein the metallic second portion comprises a stainless steel.

18. A fastener system, comprising:
 - a vehicle body panel;
 - a one piece fastener having a metallic portion insert moldable with a polymeric moldable portion;
 - at least one U-shaped member of the metallic portion operably receiving a fixed rib connectably joined to a trim piece; and
 - a pair of support posts insert moldable with the moldable portion and operably engageable within a substantially rectangular aperture of the body panel;
 - wherein the deflectable wings operably deflect toward each other upon penetration of the support posts within the aperture and expand away from each other by spring force to releasably engage the fastener with the body panel.
19. The system of Claim 18, wherein the at least one U-shaped member comprises a pair of U-shaped members, each having a bight section to releasably engage the trim piece.
20. The system of Claim 19, wherein the bight section includes at least one barb.
21. The system of Claim 19, comprising a central barb formed between the pair of U-shaped members.

22. The system of Claim 18, wherein each of the support posts comprises a beveled end for operable alignment with the rectangular aperture.

23. The system of Claim 18, wherein each of the support posts includes a width smaller than a rectangular aperture width permitting an angular rotation of the support posts within the rectangular aperture.

24. The system of Claim 18, wherein the moldable portion includes a flexible skirt operably contacting the vehicle body panel in a fully engaged position of the one piece fastener.

25. The system of Claim 18, wherein the fixed rib is insert moldable with a doghouse assembly, the doghouse assembly being positionable between the fixed rib and the trim piece.

26. The system of Claim 18, wherein the deflectable wings operably deflect upon penetration of the support posts within the aperture with an insertion pressure of up to 15 pounds.

27. The system of Claim 18, comprising a fastener insertion pressure of at least 10 pounds.

28. The system of Claim 18, comprising a minimum fastener removal pressure of 35 pounds.

29. A method of making a one-piece fastener for joining an automotive trim piece to an automobile body, the method comprising:
 - molding a body portion including:
 - shaping a substantially oval flexible skirt; and
 - extending a pair of support posts substantially perpendicularly from the skirt; and
 - insert molding a metallic body portion with the moldable body portion, including:
 - forming a pair of metallic deflectable wings on a first side of the flexible skirt adjacent to the support posts; and
 - locating a metallic U-shaped member on a second side of the flexible skirt.
30. The method of Claim 29, comprising connectably joining a moldable bridge between distal ends of each of the support posts.
31. The method of Claim 29, comprising partially insert molding an end portion of the metallic body portion into the bridge.
32. The method of Claim 31, comprising freely extending the pair of deflectable wings from the end portion.

33. The method of Claim 32, comprising orienting distal free ends of the deflectable wings toward the flexible skirt.